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RESEARCH PROJECT STATEMENT
Project 17-24, FY 2002****Use of Event Data Recorder (EDR) Technology for
Roadside Crash Data Analysis****RESEARCH PROBLEM STATEMENT (Posted date:
8/28/01)**

There is a critical need to obtain accurate and reliable "real-world" crash data to improve vehicle and highway safety. The use of Event Data Recorder (EDR) information has the ability to profoundly affect roadside safety. EDRs are capable of capturing vehicle dynamics data, such as vehicle speed; lateral and longitudinal acceleration-time histories; principal direction of force on the vehicle; the status of braking, steering, seat belt usage, and air bag deployment; and other valuable crash information. This represents a new source of objective data for the highway and vehicle safety community because it will provide a "real world" connection between controlled test results and actual field performance of vehicles and highway design features.

EDRs have the potential to capture a large number of crash-related and other data elements for a wide range of users with different data needs. The data elements related to improving vehicle safety and driver performance are being used, but little has been done to apply the data elements to roadside safety analysis. Research can identify data elements relevant to roadside safety and improve methods to retrieve, store, and access these data.

OBJECTIVES

The objectives of this research are to (1) recommend a minimum set of EDR data elements for roadside safety analysis and (2) recommend procedures for the retrieval, storage, and use of EDR data from vehicle crashes.

Accomplishment of the project objective(s) will require at least the following tasks.

TASKS

Task descriptions are intended to provide a framework for conducting the research. The NCHRP is seeking the insights of proposers on how best to achieve the research objective. Proposers are expected to describe research plans that can realistically be accomplished within the constraints of available funds and contract time. Proposals must present the proposers' current thinking in sufficient detail to demonstrate their understanding of the issues and the soundness of their approach to meeting the research objective.

Task 1. Synthesize the current U.S. and international literature on collection, storage, and use of EDR data for roadside and vehicle safety. Meet with a data collection agency to assess current EDR data collection techniques.

Note: For current EDR vehicle safety research see:

- *Docket and Federal Register Records*
- *Record of the NHTSA Event Data Recorder Working Group Docket NHTSA-99-5218, Available at: <http://dms.dot.gov>*
- *Record of the NHTSA Truck and Bus Event Data Recorder Working Group Docket NHTSA-00-7699, Available at: <http://dms.dot.gov>*
- *Symposia Records*
- *Transportation Safety and the Law, April 25-26, 2000 National Transportation Safety Board http://www.nts.gov/events/2000/symp_legal/default.htm*
- *International Symposium on Transportation Recorders, May 3-5, 1999 National Transportation Safety Board http://www.nts.gov/events/symp_rec/symp_rec.htm*

Task 2. Identify existing and potential EDR data elements that could be used to improve vehicle and roadside safety. The EDR data elements shall be prioritized based on roadside safety analysis needs.

Task 3. Review the data elements that are currently recommended for collection in "Model Minimum Uniform Crash Criteria" (MMUCC) and identify those that can be more accurately and effectively collected using EDRs. Identify and prioritize, based on roadside safety needs, data elements not included in MMUCC that could be provided accurately and effectively using EDRs.

Note: MMUCC is available at www.nhtsa.gov.

Task 4. Investigate current methods for initial retrieval and

storage of, as well as subsequent use of, EDR crash data for roadside safety analysis. Identify key issues, problems, and costs associated with these methods.

Task 5. Prepare an interim report documenting the findings of Tasks 2 through 4 and meet in Washington, D.C. with the project panel approximately 1 month after submittal of the interim report.

Task 6. Recommend procedures for improved retrieval, storage, and use of EDR crash data. The recommendations shall consider, as a minimum, resource requirements, cost-effectiveness, legal acceptability, and public acceptance. Identify possible obstacles to implementing the recommended procedures.

Note: The assessment of resource requirements and cost effectiveness shall be qualitative in nature.

Task 7. Submit a final report that documents the entire research effort.

SPECIAL NOTES

A. The results of Task 1 shall be submitted within 2 months of the contract award.

B. For the purpose of this project, EDRs are defined as safety-related devices that store vehicle sensor output data for a short duration of time in response to exceeding a predetermined operational threshold.

C. For the purpose of this project, the term "retrieval" refers to the extraction of data from the EDR and its translation into engineering units; "storage" refers to the secure, long-term retention of retrieved EDR data; and "access" refers to the extraction of the data from storage.

D. Proposals shall include a task-by-task breakdown of labor hours for each staff member as shown in Figure 5 in the brochure, "Information and Instructions for Preparing Proposals" (<http://www4.nas.edu/trb/crp.nsf> under "Current RFPs [Requests for Proposals]"). Proposals also shall include a breakdown of all costs (e.g., wages, indirect costs, travel, materials, and total) for each task.

E. NCHRP projects are intended to produce results that will be applied in practice, and proposals and the project final report must contain an implementation plan for moving the results of the research into practice. Item 4(c), "Anticipated

Research Results," in each proposal must include an Implementation Plan that describes activities to promote application of the product of this research. It is expected that the implementation plan will evolve during the project; however, proposals must describe, as a minimum, the following: (a) the "product" expected from the research, (b) the audience or "market" for this product, (c) a realistic assessment of impediments to successful implementation, (d) the institutions and individuals who might take leadership in applying the research product, (e) the activities necessary for successful implementation, and (f) the criteria for judging the progress and consequences of implementation.

F. Item 5 in the proposal, "Qualifications of the Research Team," must include a section labeled "Disclosure." Information relevant to the NCHRP's need to ensure objectivity and to be aware of possible sources of significant financial or organizational conflict of interest in conducting the research must be presented in this section of the proposal. For example, under certain conditions, ownership of the proposing agency, other organizational relationships, or proprietary rights and interests could be perceived as jeopardizing an objective approach to the research effort, and proposers are asked to disclose any such circumstances and to explain how they will be accounted for in this study. If there are no issues related to objectivity, this should be stated.

Funds Available: \$250,000

Contract Time: 18 months (includes 1 month for review and approval of the interim report and 3 months for review and revision of the final report)

Staff Responsibility: Mr. Charles W. Niessner, 202/334-1431 (E-mail: cniessne@nas.edu)

Authorization to Begin Work: March 2002--estimated

<p>Proposals (20 single-bound copies) are due not later than 4:00 p.m. on October 17, 2001.</p>
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This is a firm deadline, and extensions simply are not granted. In order to be considered, all 20 copies of the agency's proposal accompanied by the executed, unmodified Liability Statement must be in our offices not later than the deadline shown, or they will be rejected.

Delivery Instructions:

For private, paid messenger services such as Federal Express, DHL, UPS, etc., or for hand-carried deliveries:
PROPOSAL-NCHRP

Transportation Research Board
National Research Council
Green Building, Suite 300
2001 Wisconsin Avenue, NW
Washington, DC **20007**

For U.S. Postal Service mail:
PROPOSAL-NCHRP
ATTN: Dr. Robert J. Reilly
Director, Cooperative Research Programs
Transportation Research Board
2101 Constitution Avenue, NW
Washington, DC **20418**

Liability Statement

The signature of an authorized representative of the proposing agency is required on the unaltered statement in order for the NCHRP to accept the agency's proposal for consideration. **Proposals submitted without this executed and unaltered statement by the proposal deadline will be summarily rejected.** An executed, unaltered statement indicates the agency's intent and ability to execute a contract that includes the provisions in the statement.

Here is a printable version of the [Liability Statement \(pdf\)](#). A free copy of the Adobe Acrobat PDF reader is available at <http://www.adobe.com>.

General Notes

1. According to the provisions of Title 49, Code of Federal Regulations, Part 21, which relates to nondiscrimination in federally assisted programs, all parties are hereby notified that the contract entered into pursuant to this announcement will be awarded without discrimination on the grounds of race, color, religion, sex, national origin, or disability.
2. The essential features required in a proposal for research are detailed in the current NCHRP brochure entitled ["Information and Instructions for Preparing Proposals."](#) **Proposals must be prepared according to this document, and attention is directed specifically to Section IV for mandatory requirements. Proposals that do not conform with these requirements will be rejected. [This brochure is available here.](#)**
3. The Transportation Research Board encourages participation of small businesses, minority-owned firms, and women's business enterprises as contractors or subcontractors for NCHRP projects.
4. Proposals are evaluated by the NCHRP staff and a project panel consisting of individuals collectively very knowledgeable in the problem area. Selection of an agency is made only by the responsible panels considering the following factors: (1) the proposer's demonstrated understanding of the problem; (2) the merit of the proposed research approach and experiment design; (3) the experience, qualifications, and objectivity of the research team in the same or closely related problem area; (4) the plan for ensuring application of results; and (5) the adequacy of the facilities. The total funds available are made known in the project statement, and line items of the budget are examined to determine the reasonableness of the allocation of funds to the various tasks. If the proposed total cost exceeds the funds available, the proposal is rejected.

5. All proposals become the property of the National Cooperative Highway Research Program. Final disposition will be made according to the policies thereof, including the right to reject all proposals.

IMPORTANT NOTICE

Potential proposers should understand clearly that the research project described herein is tentative. The final content of the program depends on the level of funding made available through States' agreements for financial support of the NCHRP . Nevertheless, to be prepared to execute research contracts as soon as possible after sponsors' approvals, the NCHRP is assuming that the tentative program will become official in its entirety and is proceeding with requests for proposals and selections of research agencies.

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rderr@nas.edu.

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